23186
S/181/61/003/005/031/042
B108/B209

9,4300 (1143, 1151, 1136)

AUTHORS: Landsberg, Ye. G. and Kalashnikov, S.G.

TITLE: Electron capture cross section of manganese atoms in
germanium

PERIODICAL: Fizika tverdogo tela, v. 3, no. 5, 1961, 1566 - 1570

TEXT: The authors studied the temperature dependence of the electron
lifetime in p-type germanium containing high-purity manganese. The
manganese concentration was determined from the variation in the tempera-
ture dependence of the Hall constant. For this purpose, an ingot with a
given antimony concentration was prepared, whose electron concentration
n_o (equaling the difference between donor and acceptor concentrations
$N_d - N_a$) was measured. After this, manganese was added so that the lower
manganese level was partly filled with electrons. Fig. 1 shows the result.
The obtained concentration of manganese atoms, N_t, corresponds to a
distribution coefficient, k, of about $1.5 \cdot 10^{-6}$. Gallium was introduced

Card 1/5

into the crystals in order to obtain samples with a known hole concentration. The Hall constant was measured in a field of 3600 oersteds. After this the crystals were melted, and manganese was added. The properties of the samples are given in the Table. The lifetime was measured by a method of compensating the voltage of the photomagnetic effect and the photoconductivity (Ref. 4: S. G. Kalashnikov, Ye. G. Landsberg. ZhTF, XXVIII, 1387, 1958). Measurements were made in the temperature interval of from 95 to 330°K and showed a decrease in electron lifetime with rising manganese content. The manganese atoms in p-type germanium were found not to give rise to a noticeable adhesion. Considering that, according to Ref. 1 (H. H. Woodbury a. W. W. Tyler. Phys. Rev., 100, 659, 1955), manganese produces two levels in germanium ($E_1 - E_v = 0.16$ ev and $E_c - E_2 = 0.37$ ev), the theoretical expression for the lifetime under the present

conditions reads: $\tau = \dfrac{p_o + p_1}{C_{n1}p_o + C_{n2}p_1}$ (1), where $C_{n1} = NvS_{n1}$; $C_{n2} = NvS_{n2}$;

S_{n1} and S_{n2} are the electron capture cross sections for the lower and the

Card 2/5

upper level, respectively; v is the velocity of thermal motion of electrons;

$$P_1 = \frac{g_1}{g_0} N_v \exp \frac{E_v - E_1}{kT} \quad (2);$$

g_1 and g_0 are the degeneration multiplicity factors of the completed and of the empty level E_1; N_v denotes the effective phase density in the valence band. The capture cross sections calculated from experimental data on lifetime and manganese concentration were found to be $S_{n1} = 2 \cdot 10^{-16}$ cm^2 (90°K) and $S_{n2} = 4 \cdot 10^{-17}$ cm^2 (300°K). The mean velocity of thermal motion of electrons at 300°K was taken to be $1.07 \cdot 10^7$ cm/sec. The results showed only a slight temperature dependence of the capture cross sections, which is typical of deep acceptor levels in germanium. The lower level is ascribed to Mn$^-$ ions, and the upper one to Mn^{2-} ions. The high capture cross section S_{n1} is explained by a theory established by M. Lax (Ref. 10: J. Phys. Chem. Sol., 8, 66, 1959) who considered capture to be a sequence of single-phonon processes in which excited centers take part. The S_{n2} capture (electron capture on Mn$^-$ ions) is ascribed to the tunnel effect in the presence of a Coulomb barrier.

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Electron capture cross...

23126
S/181/61/003/005/031/042
B108/B209

There are 3 figures, 1 table and 20 references: 8 Soviet-bloc and 11 non-Soviet-bloc.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR Moskva
(Institute of Radio Engineering and Electronics AS USSR, Moscow)

SUBMITTED: November 30, 1960

Table.

Legend: 1)Number of sample;
2)hole concentration p_o, cm^{-3};
3)manganese concentration
N_t, cm^{-3}; 4)lifetime τ_{n02}, μsec;
5)lifetime τ_{n01}, μsec; 6)density
of dislocations Nd, cm^{-2}.
Card 4/5

Table

Номер образца 1)	Концентрация дырок p_o, см$^{-3}$ 2)	Концентрация марганца N_i, см$^{-3}$ 3)	Время жизни τ_{n02}, мксек. 4)	Время жизни τ_{n01}, мксек. 5)	Плотность дислокаций Nd, см$^{-2}$ 6)
1	$1.0 \cdot 10^{15}$	$5.0 \cdot 10^{13}$	50	15	80
2	$1.4 \cdot 10^{15}$	$1.0 \cdot 10^{14}$	26	7.5	900
3	$2.8 \cdot 10^{15}$	$2.0 \cdot 10^{14}$	15	4.8	800
4	$2.1 \cdot 10^{15}$	$2.6 \cdot 10^{14}$	12	9.6	100
5	$4.8 \cdot 10^{15}$	$6.0 \cdot 10^{14}$	4.8	1.5	500
6	$6.0 \cdot 10^{15}$	$1.1 \cdot 10^{15}$	2.0	0.7	1200

24.7700

36471
S/181/62/004/003/010/045
B102/B104

AUTHORS: Karpova, I. V., Alekseyeva, V. G., and Kalashnikov, S. G.

TITLE: Recombination properties of gold in n-type germanium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 634 - 641

TEXT: This paper is to complete previous studies (FTT, 3, 964, 1961) about p-type Ge. The data available up to now, especially those on Au electron-trapping cross sections, diverge considerably and the temperature dependence of these cross sections is not sufficiently investigated. n-type Ge single crystals were grown from 99.99% Ge and from Ge of even higher purity. Both series of samples were doped with Au and Sb of such concentrations that the temperature dependences of the electron concentrations, $\log n_0 = f(1/T)$, showed separate and distinct plateaus. The overall lifetime was measured between 100 and 330°K photoelectromagnetically between 100 and 330°K ($\tau_{pem} = 10^{-9}\text{-}10^{-10}$ sec) without being affected by adhesion. It was also determined from photoconductivity (τ_{pc}) in order to determine the effect of adhesion. τ_{pem} and τ_{pc} were calculated without

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Recombination properties ...

S/181/62/004/003/010/045
B102/B104

consideration of surface recombination effects on the assumption that the Hall mobility is equal to the drift mobility. Electron mobility was determined from measurements of resistivity and Hall-constant. τ_{pem} and τ_{pc} were plotted versus temperature for three Au-doped specimens and one Sb-doped standard. The curves $\log \tau = f(1/T)$ for τ_{pem} and τ_{pc} coincide at room and higher temperatures, but diverge at low temperatures. At $100^{\circ}K$ τ_{pc} exceeds τ_{pem} for Au-doped Ge by several thousand times which is indicative of the intense adhesion of minority carriers. Adhesion increases with the Au concentration; τ_{pem} is proportional to $1/C_{Au}$ at low temperatures. Au furnishes the major part of recombination and adhesion centers, Sb and other impurities play a minor role. This effect of Au is attributed to its level $E_c - E_3 = 0.20$ ev. The hole trapping coefficient, $\alpha_p^=$, of the doubly charged Au centers was determined from the lower part of the temperature dependence of τ_{pem}. At $300^{\circ}K$, $\alpha_p^=$ is equal to $1 \cdot 10^{-7} cm^3 \cdot sec^{-1}$, $\alpha_p^=(T) \sim T^{-n}$ with n=3.5. The coefficient of electron trapping by Au$^=$ was determined by

Card 2/3

9.4177 (1035,1051)
26.2421

30790
S/181/61/003/011/033/056
B125/B138

AUTHORS: Morozov, A. I., and Kalashnikov, S. G.

TITLE: Adhesion phenomena in zinc-containing germanium

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3473-3479

TEXT: The authors investigate photomagnetic effect and photoconductivity in n-type germanium by comparing the lives of carriers as determined from photoelectromagnetic effect (τ_{PEM}), from photoconductivity (τ_{PC}) and from the compensation of photoelectromagnetic and photoconductivity effects under stationary conditions. The same apparatus is used as that described in a previous paper (S. G. Kalashnikov, A. I. Morozov, FTT, 2, 1813, 1960). By using a cryostat with evacuation makes it possible to work with solid nitrogen in some cases. The measurements were carried out under the following conditions: 1) Hall angles low 2) Length of the irradiated part of the sample containing many diffusion lengths; regions in around the contacts shaded for some diffusion lengths; width of sample much greater than its depth (one-dimensional problem). 3) Pairs generated on the surface. The theory of photoconductivity and photoelectromagnetic effects X

Card 1/8 3

Adhesion phenomena in zinc-containing...

are applied to phenomena with linear recombination. In Fig. 1 the typical temperature dependence of τ_{PEM}, τ_{PC} and τ_C is shown for two samples. These three periods are equal at room temperature, but at lower temperatures they are different because of adhesion. The curves for these temperatures have the same character as the curves for copper. Unlike copper, in the case of zinc τ_p is not inversely proportional to the concentration of zinc. Recombination must therefore pass through other centers of whose origin cannot be verified. Fig. 2 shows typical curves for the temperature dependence of the adhesion coefficient. The same values of k are found from the two relations $\tau_{PC} = k\tau_p$ and $\tau_e = k^2 \tau_p$ (3), where τ_p denotes the life-time of the minority carriers. k is equal to one at room temperature, but it increases at lower temperatures and reaches values of 10^2-10^3 at liquid-nitrogen temperatures. The temperature region where $k \sim 1$ becomes narrower with increasing zinc concentration, and the absolute values of k increase. Fig. 3 shows the influence of light intensity on τ_{PC} and on the diffusion length L_0 (photoelectromagnetic effect) for one of the

Card 2/6 3

30913

S/181/62/004/006/019/051
B104/B112

24.7700

AUTHORS: Kurova, I. A., Kalashnikov, S. G., and Tyapkina, N. D.

TITLE: The kinetics of impurity conduction in Au-doped n-type
              germanium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1503 - 1509

TEXT: The trapping of electrons on the E_4 level of gold in Au-doped
n-type germanium was investigated at hydrogen temperature. The
photoconduction of single-crystal specimens was determined in a He
cryostat evacuated to $\sim 10^{-2}$ mm Hg. The heat emission of a crucible furnace
was filtered through Ge and Sb-In filters. The damping periods of the
photoconduction of the specimens were measured for two different directions
of current passage. If the contacts of the samples are of high quality,
the damping of photoconduction can be described by $\exp(-t/\tau)$. The

coefficients $\alpha_n^=$ of electron trapping on the E_4 level of gold were

determined from measured values of τ, using the relation $\tau = (\alpha_n^= N_3)^{-1}$

Card 1/2

VAVILOV, V.S.; KALASHNIKOV, S.G.

Photoelectric phenomena in semiconductors (Second International
Conference on Photoconductivity). Usp.fiz.nauk 76 no.4:749-758
Ap '62.   (MIRA 15:7)
        (Semiconductors) (Photoconductivity—Congresses)

44514

S/181/63/005/001/045/064
B108/B180

AUTHORS: Karpova, I. V., and Kalashnikov, S. G.

TITLE: Electron and hole lifetimes in highly doped germanium

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 301-307

TEXT: Continuing earlier work (FTT, 1, 529, 1959) the authors studied the
lifetime of the excess carriers in n- and p-type Ge doped with P, Sb, and
B, in dependence on the equilibrium concentration of the majority carriers.
The doped samples were refined by recrystallization. To find out whether
surface recombination and adhesion had any effect, the lifetime was
determined by the photoelectromagnetic and photoconductive effects, and
from their compensation. Below a majority carrier concentration of
$\sim 10^{17}$ cm^{-3} it was also determined from measurements of diffusion length
with a linear light probe and a point collector. The results obtained by
these four methods agreed with one another within the limits of accuracy.
They are slightly temperature dependent. In crystals of both types, after
reaching a constant level of 50-60 µsec, from $\sim 1 \cdot 10^{17}$ cm^{-3} the lifetime

Card 1/2

Electron and hole lifetimes ...

S/181/63/005/001/045/064
B108/B180

falls rapidly with rising concentration, to ~ 1 μsec at $\sim 10^{18}$ cm^{-3}.
This rapid decrease can be explained qualitatively by the theory of impact
recombination on traps, which would also account for the slight
temperature dependence. More exact experimental data would be required
to prove this quantitatively. Radiative recombination in the fundamental
crystal lattice is another possible process, which might fit in with the
observed slight temperature dependence. There are 5 figures and 1 table.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moskva
                (Institute of Radio Engineering and Electronics AS USSR,
                Moscow)

SUBMITTED: August 13, 1962

Card 2/2

247560

S/181/63/005/001/048/064
B108/B180

AUTHORS: Yeliseyev, P. G., and Kalashnikov, S. G.

TITLE: The recombinative properties of nickel in germanium

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 320-326

TEXT: To clear up discrepancies in published data on the electron trapping
cross sections of Ni and Ni⁻ in p-type Ge, the authors studied the life-
time of the excess carriers in dependence on temperature, nickel concentra-
tion, and dislocation density. It was measured by two methods: (1)
compensation of the photomagnetic effect by photoconductivity, (2)
attenuation of photoconductivity. The results were the same in the range
120 - 330°K. The Ge crystals were doped with nickel by diffusion, either
from an electrolytic layer onto the sample's surface or from a solution
of nickel in molten lead. The results were qualitatively the same and
showed only a slight quantitative difference (20 - 30%). At low Ni
concentrations, the lifetime-versus-temperature curve has two plateaus,
with the lifetime falling with decreasing temperature in between. As the
Ni concentration increases, the curve maintains its two plateaus, but the

Card 1/2

KUROVA, I.A.; KALASHNIKOV, S.G.

Electric instability in germanium. Fiz. tver. tela 5 no.11:3224-
3230 N '63.   (MIRA 16:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

S/181/65/005/C04/014/C47
B102/B186

AUTHORS: Landsberg, Ye. G., and Kalashnikov, S. G.

TITLE: Recombination properties manganese in germanium

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 1067 - 1076

TEXT: The electron - hole recombination on manganese atoms in n-type germanium single crystals was investigated by two methods: by the stationary photomagnetic effect and photoconductivity, and by the photoconduction attenuation. The crystals investigated were grown according to the Czochralski method (growth axis [111]) and contained antimony with manganese impurities, the latter in concentrations between $6.0 \cdot 10^{15}$ and $1.0 \cdot 10^{15}$ cm^{-3}. The electron concentrations of the samples under investigation were varied between $2.0 \cdot 10^{15}$ and $2.5 \cdot 10^{14}$ and the dislocation densities between $2 \cdot 10^{2}$ and $1.7 \cdot 10^{3}$ cm^{-2}. The hole trapping factor $a_p^=$ for trapping by Mn^{2-} ions was determined at 300°K; it lies between 7.9 and $4.7 \cdot 10^{-10}$ cm^{3}sec^{-1} and depends exponentially on the temperature (the exponents vary between 5.1 and 4.2). For trapping by Mn$^-$ ions the electron trapping coefficient

Card 1/2

Recombination properties...

S/181/63/005/004/014/047
B102/B186

a_n^- lies between 0.5 and $1.0 \cdot 10^{-10}$ $cm^3 sec^{-1}$ (at 300°K) and is a weak temperature function. When the temperature is reduced the Mn^- ions show an adhesion effect for holes. Photoconduction damping in the case of self-excitation leads to a value of a_n^- of the same order of magnitude as the stationary method and verifies the weak temperature dependence. There are 8 figures and 3 tables.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR Moskva (Institute of Radio Engineering and Electronics AS USSR, Moscow)

SUBMITTED: October 26, 1962

Card 2/2

KALASHNIKOV, Sergey Grigor'yevich; VERES, L.F., red.; KOZLOV,
V.D., red.

[Electricity] Elektrichestvo. Izd.2., perer. Moskva,
Nauka, 1964. 666 p.   (MIRA 17:12)

ACCESSION NR: AP4013502   S/0181/64/006/002/0440/0444

AUTHORS: Zhdanova, N. G.; Kalashnikov, S. G.

TITLE: The effect of temperature on the kinetics of damping impurity photoconduc-
tivity in copper doped germanium

SOURCE: Fizika tverdogo tela, v. 6, no. 2, 1964, 440-444

TOPIC TAGS: impurity, impurity photoconductivity, photoconductivity, germanium,
copper, copper doped germanium, photoionization, photoionization cross section,
capture coefficient, n type germanium

ABSTRACT: This study was made in the temperature interval 60-235K in n-type Ge by
electron excitation of the outer copper level with $E_c = 0.26$ ev. It was found
that the temperature coefficient of capture for electrons from this level, through-
out the rather wide investigated temperature range, differs appreciably from an
exponential relationship, and is best defined by the formula

$$ \xi_n \sim \exp\left(-\frac{T_0}{T}\right)^{\frac{1}{4}}, $$

in which full consideration is given to tunnel leakage of electrons through the

Card 1/2

ACCESSION NR: AP4013502

potential barrier of the center. In a number of samples the damping of impurity photoconductivity was defined by two exponents with markedly different time constants. It was found that the time constant of the long exponent was not inversely proportional to n_0, but that the short exponent was. The time constant increased with decrease in intensity of illumination. The authors conclude that the long exponent is not associated with electron capture at the outer Cu level, and, because of this, results of experiments in which this long exponent was observed should not be used. The long exponent was observed in crystals with high dislocation density and with no dislocations. The explanation is not known. For the specimens used it was found that the photoionization cross section of the investigated level is practically independent of temperature. Orig. art. has: 4 figures, 1 table, and 2 formulas.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moscow (Institute of Radio Engineering and Electronics AN SSSR)

SUBMITTED: 03Aug63   DATE ACQ: 03Mar64   ENCL: 00

SUB CODE: PH   NO REF SOV: 008   OTHER: 000

Card 2/2

L 10367-65   EWT(1)/EWG(k)/EWT(m)/EEC(t)/EWP(b)   Pz-6   IJP(c)/AFWL/ASD(a)-5/
AS(mp)-2/AFMDC/SSD/ESD(gs)/ESD(t)/RAEM(t)   JD/AT

ACCESSION NR   AP404756   S/0181/64/006/010/3161/3164

AUTHOR: Kalashnikov, S. G.; Morozov, A. I.; Kirillov, V. P.

TITLE: Electrical oscillations at current saturation in cadmium

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3161-3164

TOPIC TAGS: cadmium sulfide, photoconductivity, Hall effect, car-

ABSTRACT: The authors investigated n-type crystals, 0.3--0.8 cm long, with a dark conductivity $<10^7$ ohm^{-1}.cm^{-1} and a Hall mobility ~250 cm^2.V^{-1}.sec^{-1}. The electric field was directed either parallel or at right angles to the hexagonal c-axis. Persistent current oc-curred electrically at field intensities higher than a certain critical value E_{cr} (not specified) and only if the illumina-tion of the crystal was nonuniform. The amplitude of the current in-

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L 10367-65
ACCESSION NR: AP4046641

tions reached 25% of the total current; the frequency was of the
order of 1 Mc and it decreased with increase of the sample length.
These persistent oscillations were observed only if the electric
field was applied at right angles to the c-axis. Tests using pulsed
voltages (of 20--1200 μsec duration) showed that the observed oscil-

L 10367-65

ACCESSION NR: AP4046541

...oscillation frequency.   "The authors thank L. A. Sy*soyev for
...the material.' Orig. art. has: 2 figures.

SUR CODE: 88, OP   NR REF SOV: 000   OTHER: 005

Card 3/3

Card 1/2

L 43940-65
ACCESSION NR: AP5006877

2

...instability and electric self-oscillations, con-

Card _a/2 mb_

L $\quad$ EEC(t)-2/EWP(1)/EWP(m)/EWP(b)/T/EWP(t) $\quad$ Pi-4 $\quad$ IJP(c) $\quad$ CN/JD

ACCESSION NR: AP5017304 $\qquad$ UR/0181/65/007/007/2215/2217

AUTHOR: Kalashnikov, S. G.; Morozov, A. I.; Stankovskiy, B. A., Vysogev, L. A.

Card 1/2

ACCESSION NR: AP5017324

tral composition of the applied illumination.   An analysis of the results shows
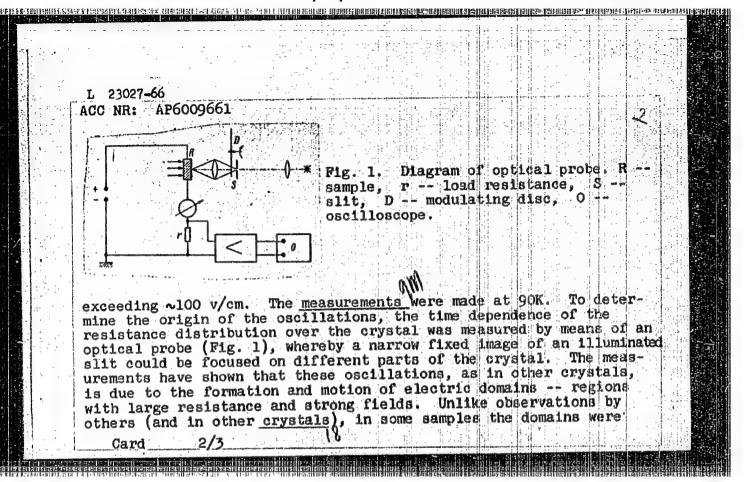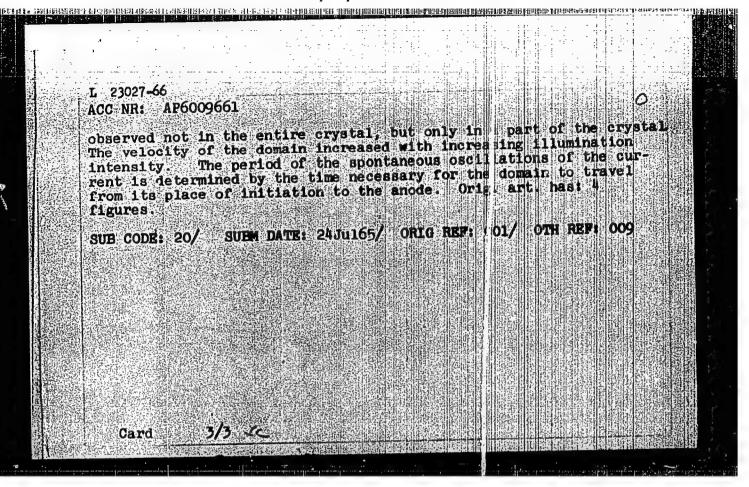
L 2404-66 EWT(1)/EWT(m)/EPA(w)-2/EWP(t)/EWP(b)/EWA(m)-2 LJP(c) JD/AT

ACCESSION NR: AP5022469 GE/0030/65/011/001/0415/0428

AUTHOR: Kagan, M. S.; Kalashnikov, S. G.; Zhdanova, N. G.

TITLE: Nonlinear electrical effects and recombination of the hot electrons in compensated germanium

SOURCE: Physica status solidi, v. 11, no. 1, 1965, 415-428

TOPIC TAGS: germanium, semiconductor, hot electron effect, recombination impurity center, capture cross section

ABSTRACT: Steady-state and transient current-voltage characteristics of Cu-doped n-type Ge samples with a partially compensated upper $(E_c - 0.26$ ev) Cu level were investigated in a field which was varied from 1 to 10^4 v/cm. In a field greater than ~ 100 v/cm the current-voltage curves were found to be sublinear. A study was made of the effect of temperature and of the spectrum of the incident light on the steady state and the kinetics of the photocurrent. Negative dif-

L 2404-66

ACCESSION NR: AP5022469

concentration in the conduction band. This was ascribed to the field dependence of α_n, the probability of electron capture by the doubly charged Cu ions. In the strong electric fields the crystals became inhomogeneous due to the formation of strong- and weak-field regions. The possible influence of these inhomogeneities on the nonlinear effects was discussed and the change of d_n in the the strong field was estimated. Orig. art. has: 13 figures and 13 formulas. [CS]

ASSOCIATION: Institute of Radioengineering and Electronics, Academy of Sciences, USSR, Moscow

SUBMITTED: 05Jul65   ENCL: 00   SUB CODE: SS, EM

NO REF SOV: 006   OTHER: 015   ATD PRESS: 4107

Card 2/2

L 23027-66   EWT(1)/EWT(m)/T/EWP(t)   IJP(c)   JD/AT

ACC NR: AP6009661   SOURCE CODE: UR/0181/66/008/003/0788/0791

AUTHORS: Zhdanova, N. G.; Kagan, M. S.; Kalashnikov, S. G.

ORG: Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR)

TITLE: Instability of current and electric domains in compensated germanium

SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 788-791

TOPIC TAGS: germanium, photoeffect, crystal structure, semiconductor impurity, electric current

ABSTRACT: This is a continuation of earlier work (Phys. Stat. Sol. v. 11, 415, 1965) where it was found that under certain conditions copper-doped or gold-doped germanium is subject to intense low-frequency current oscillations. The present article deals with the properties and nature of these oscillations in n-type germanium containing copper with a partially compensated upper level, under definite illumination conditions, at nitrogen temperatures, and in fields

Card   1/3

L 23027-66
ACC NR: AP6009661

Fig. 1. Diagram of optical probe. R -- sample, r -- load resistance, S -- slit, D -- modulating disc, O -- oscilloscope.

exceeding ~100 v/cm. The measurements were made at 90K. To determine the origin of the oscillations, the time dependence of the resistance distribution over the crystal was measured by means of an optical probe (Fig. 1), whereby a narrow fixed image of an illuminated slit could be focused on different parts of the crystal. The measurements have shown that these oscillations, as in other crystals, is due to the formation and motion of electric domains -- regions with large resistance and strong fields. Unlike observations by others (and in other crystals), in some samples the domains were

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L 23027-66
ACC NR: AP6009661   O

observed not in the entire crystal, but only in part of the crystal.
The velocity of the domain increased with increasing illumination
intensity.   The period of the spontaneous oscillations of the cur-
rent is determined by the time necessary for the domain to travel
from its place of initiation to the anode.   Orig. art. has 4
figures.

SUB CODE: 20/   SUBM DATE: 24Jul65/   ORIG REF: 01/   OTH REF: 009

Card   3/3 ℒℂ

L 00866-67   T/EWP(t)/ETI   IJP(o)   JD/AT

ACC NR: AP6024347   SOURCE CODE: GR/0030/66/016/001/0197/0203

AUTHOR: Kalashnikov, S. G.; Bonch-Bruevich, V. L.

ORG: Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR, Moscow

TITLE: On the velocity of space charge waves (electrical domains) in semiconductors

SOURCE: Physica status solidi, v. 16, no. 1, 1966, 197-203

TOPIC TAGS: semiconductor theory, space charge

ABSTRACT: The nonlinear problem of the velocity of space charge waves (electrical domains) which occur when the volume differential resistance becomes negative is studied. Particular attention is paid to the recombination (concentration-controlled) type of instability. A simple explicit formula is obtained for the velocity of stationary space charge waves. The domain velocity is derived for cases in which the Maxwellian relaxation time is much longer or much shorter than the recombination time. In   order of magnitude, the results obtained are in agreement with experimental data on domains in Au- and Cu-doped Ge. Authors thank M. S. Kagan for informing them of his experimental results concerning the domains in Cu-doped Ge and for discussing the manuscript. They also thank Yu. F. Sokolov for discussing the manuscript. Orig. art. has 1 figure and 22 formulas.

SUB CODE: 20/ SUBM DATE: 18Apr66/ ORIG REF: 009/ OTH REF: 014

Card 1/1 LS

KALASHNIKOV, S. I.

13

Electric insulating materials for tubular heating re-
sistors. V. K. Bessrashnov, S. I. Kalashnikov, and A. L.
Biryukov. U.S.S.R. 63,704, Aug. 31, 1945. Insulators
are made from $MgCO_3$, MgO, a mixt. of these, or a product
obtained from the waste (turnings and filings) of the Mg-Al
alloy Electron by calcining in a blast of air, mixing the
resulting oxides with H_2O, briquetting, drying, baking in
an arc furnace, comminuting, and subjecting to magnetic
serum.
M. Hoseh

KALASHNIKOV S.I.

KALASHNIKOV, S.I.; OBERROV, L.Ya.

Vibration apparatus for mechanical loading and unloading
of paint grinder mills. Khim. prom. no.6:376-377 S '57.
(MIRA 11:1)

1.Khimicheskiy zavod imeni Oktyabr'skoy revolyutsii, Rostov na-Donu.
(Paint industry--Equipment and supplies)
(Loading and unloading)

Kalashnikov, S.I.

32-7-13/49

AUTHORS	Kalashnikov S.I.,Kichin N.P.,
TITLE	Perfecting of the method of Color Defectoscopy
	(Usovershenstvovaniye metoda tsvetnoy defektoskopii-Russian)
PERIODICAL	Zavodskaya Laboratoriya,1957,Vol 23,Nr 7,pp 8o6-8o8 (U.S.S.R.)

ABSTRACT   The mixture of petroleum transformer oil and turpentine is suited
only for the treatment of materials of coarse-grained structure as
red point. For the determination of extremely small tracks as well
as of the intercrystalline corrosion of materials with fine-grained
structure it was necessary to find a suitable mixture.Suchs paints
were examined as to their ability of resisting light,their adhesive
and other properties.It was found that such paints must contain lar-
ge quantities of benzene and oil.A mixture based upon collodium
was found to be favorable.As admixtures to zinc oxide,zinc white
and benzene are recommended.The following color compositons are re-
commended in this paper for defectoscopy: Sudan red 4: 2:95 ml ben-
zene, 5 ml / MK 8/-oil, 1 g red paint. White: 7:7o ml collodium in
a spirit-ether solution (for instance colloid oxiline.). (64 units
colloxiline,76 units sulphuric ether,2o units of rectified spirits).
In addition: 1o ml diluter "RDV" or acetone, 2o ml benzene, 5 g zinc
white MO per 1oo ml of the mixture. The suggested method proved to
be successful.
There are 2 figures.

AVAILABLE	Library of Congress.
Card 1/1	

LEYKAND, Mikhail Solomonovich; KALASHNIKOV, S.I., red.; BORUNOV, N.I.,
tekhn.red.

[Design of induction vacuum furnaces and their parts and
attachments] Konstruktsii induktsionnykh vakuumnykh elektro-
pechei i ikh uzlov. Moskva, Gos.energ.izd-vo, 1960. 95 p.
(Biblioteka elektrotermista, no.4).   (MIRA 14:2)
                    (Electric furnaces)

KALASHNIKOV, S.I.

Mezhkristallitnaya korroziya i korroziya metallov v napryazhennom sostoyanii
(Intercrystalline and Stress Corrosion of Metals) Moscow, Mashgiz, 1960.
358 p. 3,000 copies printed.

Ed.: I.A. Levin, Candidate of Technical Sciences; Ed. of Publishing House:
L.V. Zamlichenko, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for
Literature on Metalworking (Mashgiz): V.V. Makarovskiy,
Engineer; Editorial Board: I.A. Levin, Candidate of Technical Sciences
(Resp. Ed.), V.P. Batrakov, Candidate of Technical Sciences,
Candidate of Technical Sciences, and A.V. Turkovskaya, Candidate of Technical
Sciences.

PURPOSE: This collection of articles is intended for technical personnel concerned
with problems of corrosion of metals.

COVERAGE: The collection contains discussions of intercrystalline corrosion of
stainless steels and stress corrosion of carbon steels, low-alloy and stainless
steels, and light-weight and nonferrous alloys. The tendency of steels of
various composition and alloys to corrode under certain conditions is discussed
and the nature of corrosion and corrosion cracking is analyzed. No personalities
are mentioned. Most of the articles are accompanied by bibliographic references,
the majority of which are Soviet.

V. STRESS CORROSION OF INTERCRYSTALLINE AND NONFERROUS ALLOYS

Tomashov, N.D., Doctor of Chemical Sciences, Professor, and V.V. Bolotova,
Candidate of Chemical Sciences. Effect of Stress on the Corrosion and Potential
of the Magnesium-Manganese Alloy System   27

Timonova, M.A., Candidate of Technical Sciences. The Nature of Corrosion
Cracking of Magnesium Alloys and Protective Measures   29

Romanov, V.V., Candidate of Chemical Sciences. Effect of Certain Factors
on the Tendency of Magnesium Alloys Toward Corrosion Cracking   312

Ryabov, V.R. Stress Corrosion of the High Electrical Resistance Manganese-
Base Alloy   318

Yelakhova, L.M., V.A. Nizov, and A.V. Krepil'shchikov. Effect of
Mechanical Stress on the Electrode Potential of Copper   321

Marichev, A.V., Candidate of Technical Sciences. The Tendency of Copper
Alloys to Crack Depending Upon Their Composition   329

Fikus, O.A., Candidate of Chemical Sciences. Corrosion Cracking of Brass
in Various Climatic Zones of the USSR   345

[Fotal Beryllium Institute Biokhimiya khimii AN USSR (Corrosion Department
of the Institute of Physical Chemistry AN USSR) and   Giprotsvetmet
obrabotka (State Design and Planning Scientific Research Institute for
Working of Nonferrous Metals) conducted joint research on this subject.
A. In. Ordin, Candidate of Technical Sciences and Ts. A. Sadirova, Senior
Scientific Worker, participated in the work on behalf of the latter
institute.]

Ordin, A. In., Candidate of Technical Sciences, and Ts. A. Sadirova,
Senior Scientific Worker. On the Problem of Short-Time Testing of Brass
Resistance to Corrosion Cracking   349

Kalashnikov, S.I. and M.P. Ruhin, Engineers. Detection of Intercrystalline
Corrosion in Titanium Alloys with the Dye Penetrant Flaw Detection Method.   352

---- -- --- -- --- ~ measuring the internal friction

Card 4/9   152

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86059

S/193/60/000/010/009/015
A004/A001

AUTHOR: Kalashnikov, S. I.

TITLE: The Portable 77ДMK-3 (77DMK-3) Flaw Detector

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No. 10, pp.35-37

TEXT: In 1959 the Nauch-
no-issledovatel'skiy institut
ekspluatatsii i remonta avia-
tsionnoy tekhniki VVS (Scien-
tific Research Institute for
the Operation and Repair of
Aircraft Equipment VVS) manu-
factured a portable 77DMK-3
flaw detector for the detection
of surface defects on machine
parts by the color flaw detec-
tion method. The illustration
shows the flaw detector carried

Card 1/3

Figure 1:

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S/193/60/000/010/009/015
A004/A001

The Portable 77ДМК-3 (77DMK-3) Flaw Detector

out in the shape of a suitcase.

Figure 1:
1 compartment for the paint sprayer; 2 - can with red paint reserve; 3 - can with stock of РДВ(RDV) diluent; 4 - can with white paint stock; 5 - can with oil-kerosene mixture; 6 - case with brushes; 7 - can with RDV diluent ready-for-use; 8 - can with ready-for-use red paint; 9 - can with ready-for-use white paint; 10 - lid of flaw detector; 11 - case with brushes for red paint; 12 - calibrating device with grinding cracks; 13 - compartment for keeping the magnifying glass, rags, gloves and instruction manual.

To expose defects, red paint with a great penetrability is applied to the preliminary cleaned surface of the component. Under the effect of capillary forces the paint penetrates into narrow cracks. Then the paint is removed from the surface by a rag slightly wetted with the transformer oil and kerosene mixture. This mixture, removing the red paint only from the surface, protects the paint pentrated into the defect (crack). Then the white paint, which is capable of adsorbing and pull out the red paint from the crack, is applied to the surface. After some time, a red pattern shows on the white ground, indicating the shape and location of the defects. The white and red paints can be used at temperatures form +5 to -40°C. The overall dimensions of the flaw detector are (length x width x height);

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The Portable 77ДМК-3 (77DMK-3) Flaw Detector

S/193/60/000/010/009/015
A004/A001

380 x 170 x 180 mm; its weight, completely equipped, amounts to 6 kg. At temperatures of the component in the range of +15 to +25 the paints make it possible to detect cracks on steel parts having a depth of at least 0.01 mm and a width (on the surface) of not less than 0.004-0.006mm. There is 1 figure.

Card 3/3

SVENCHANSKIY, Aleksandr Danilovich; KALASHNIKOV, S.I., red.; SHIROKOVA,
     M.M., tekhn. red.

[Efficient use of electric resistance furnaces] Puti ratsional'noi
ekspluatatsii elektricheskikh pechei soprotivleniia. Moskva, Gos.
energ.izd-vo, 1961. 78 p. (Biblioteka elektrotermista, no.6)
                                                      (MIRA 14:12)

          (Electric furnaces)

BADMAS, Aleksandr Markovich; KULINICH, Valentin Aleksandrovich; SHA-
PIRO, Semen Vol'fovich; KALASHNIKOV, S.I., red.; LARIONOV,G.Ye.,
tekhn. red.

[Electromagnetic static frequency and phase number converter] Sta-
tisticheskie elektromagnitnye preobrazovateli chastoty i chisla faz.
Moskva, Gos.energ.izd-vo, 1961. 207 p.   (MIRA 14:12)
  (Frequency changers)   (Phase converters)

TIKHOMIROV, Pavel Mikhaylovich; KALASHNIKOV, S.I., red.; BUL'DYAYEV,
       N.A., tekhn. red.

    [Design of electric transformers]Raschet transformatorov. Izd.2.,
perer. i dop. Moskva, Gosenergoizdat, 1962. 431 p. (MIRA 16:3)
             (Electric transformers)

KALASHNIKOV, S.I.; KAMCHENKO, A.F.

Method of fixing magnetic powder on the surface of a part.
Zav. lab. 29 no.3:314 '63.   (MIRA 16:2)
                            (Magnetic materials)

MAKSIMOV, Aleksandr Aleksandrovich; KALASHNIKOV, S.I., red.;
FRIDKIN, L.M., tekhn. red.

[Economy of thermal energy in industrial enterprises]
Ekonomiia teplovoi energii na promyshlennykh predpriiati-
iakh. Moskva, Gosenergoizdat, 1963. 117 p.
(MIRA 17:1)

KALASHNIKOV, S.I.; MOROZOV, A.I.; KIRILLOV, V.P.

Electric oscillations due to current saturation in cadmium sulfide. Fiz. tver. tela 6 no.10:3161-3164 O '64.
(MIRA 17:12)

1. Institut radiotekhniki i elektroniki AN SSSR, Moskva.

KALASHNIKOV, S.H.

Existing machine tools do not permit an accelerated cutting of helical bevel
gears. Avt.trakt.prom. no.8:23-26 Ag '53.   (MLRA 6:8)

1. Moskovskiy avtozavod im. Stalina.   (Gear-cutting machines)

KALASHNIKOV, S.N.

Device for measuring errors in the pitch of bevel gears. Avt.trakt.
prom. no.9:30-31 S '54.   (MLRA 7:10)

1. Moskovskiy avtozavod imeni Stalina.
      (Gearing, Bevel)

KALASHNIKOV, S. N.

KALASHNIKOV, S. N.: "Investigation of technological factors in
the cutting of conic wheels with curvilinear teeth". Moscow,
1955. Min Higher Education USSR. Moscow Automotive Mechanics
Inst. (Dissertations for the Degree of Candidate of Technical
Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.

KALASHNIKOV, S.N., kandidat tekhnicheskikh nauk.

Rough tooth milling of spiral-conical drive wheels in the direction
of delivery. Avt.i trakt.prom. no.4:35-39 Ap '56.   (MLRA 9:8)

1. Moskovskiy avtozavod imeni Stalina.
                (Milling machinery)

KALASHNIKOV S.N.

PETUKHOV, S.P.; KALASHNIKOV, F.F.; PROROKOV, V.I.; KALASHNIKOV, S.N.;
    SMIRNOV, G.P.

Broaching machine for cutting bevel gears. [Suggested by Petukhov, S.P.;
Kalashnikov, F.F.; Prorokov, V.I.; Kalashnikov, S.N.; Smirnov, G.P.]
 Prom.energ. 12 no.10:20-21 O '57.   (MIRA 10:10)
                        (Metalworking machinery)

AUTHOR: Kalashnikov, S.N., Candidate of Technical Sciences   113-58-6-14/16

TITLE: Adaptation of a 12-Inch Head Instead of a 9-Inch Head for the
               Rough Cutting of Helical Bevel Gears (Primeneniye 12-dyuymovoy
               golovki vmesto 9-dyuymovoy pri chernovom narezanii spiral'no-
               konicheskikh koles)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 6, pp 39-42 (USSR)

ABSTRACT: As a result of experimental work carried out by the Moscow
               Automobile Plant imeni Likhachev, more rational models of
               cutter heads were adapted for production. The aim was to in-
               crease the effectiveness of the cog-cutting process of spiral
               bevel gears. The methods of duplicating and spinning were
               tested, as well as rough and finish cuttings. In rough cutting
               by the duplication method, three cutter heads were better than
               the bilateral, and in the spinning method - cutter heads of
               clockwise rotation - better than those of counter clockwise
               rotation and the resistance of the instrument was increased
               by 70 %. In the finish cutting by bilateral cutting of heads
               by each method, the higher exactness of the process, the least
               expenditure of power and quick-cutting of the steel is obtained
               by the cutter heads in which only one cutter takes part in the
Card 1/2   process and not two and then one successively. For finish cut-

113-58-6-14/16

Adaptation of a 12-Inch Head Instead of a 9-Inch Head for the Rough Cutting of Helical Bevel Gears

ting, one sided cutter heads of clockwise rotation must be used. Their resistance is almost twice as high as that of counter clockwise rotating heads. The analytical and graphic comparison of various cutter heads used in the 1160-ZIL bench showed that the productivity of the 1160-ZIL bench increased by 35% and the head resistance increased 2.5 times when the 12-inch cutter head of clockwise rotation replaced the 9-inch head of counter clockwise rotation. The resistance of finishing cutter heads and the exactness of the cutting of cogs is identical with both 12 and 9-inch cutter heads.
There are 4 graphs, 1 table and 1 figure.

ASSOCIATION: Moskovskiy avtozavod imeni Likhacheva (The Moscow Automobile Plant imeni Likhachev)

Card 2/2   1. Gears--Production--Processes   2. Cutting tools--Effectiveness

PHASE I BOOK EXPLOITATION   SOV/4633

Kalashnikov, Sergey Nikiforovich, Candidate of Technical Sciences

Opyt primeneniya ratsional'nykh konstruktsiy reztsovykh golovok (Experience in the Use of Efficient Designs of [Gear] Cutters) Moscow, Mashgiz, 1960. 121 p. 5,000 copies printed.

Ed. of Publishing House: I. I. Lesnichenko; Tech. Eds.: A. F. Uvarova and G. V. Smirnova; Managing Ed. for Literature on Metalworking and Machine-Tool Construction: V. I. Mitin, Engineer.

PURPOSE: This book is intended for designers, technicians, and foremen in gear cutting.

COVERAGE: Problems connected with the selection of basic parameters for blades and face-milling cutters for curved-tooth bevel gears are discussed. The author presents results of investigations and experience gained in the use of various cutters for roughing and finishing gears by the generating and copying methods. Designs of cutters described in the book have been introduced into production at the Avtozavod imeni Likhacheva (Automobile Plant im. Likhachev).

Card 1/6

YAKIMANSKIY, V.V., kand.tekhn.nauk; SHLYAPIN, N.A.; KIRICHINSKIY I.I.;
    SHKLYAROV, I.N.; KALASHNIKOV, S.N., kand.tekhn.nauk

Using new techniques of hot rolling of teeth in making spiral bevel
gears. Avt.prom. no.9:39-43 S '60.   (MIRA 13:9)

1. Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy pro-
myshlennosti . i Moskovskiy avtozavod imeni Likhacheva.
                (Gear shaping machines)

KALASHNIKOV, S. N.

KALASHNIKOV, S.N., kand. tekhn. nauk; NOVIKOV, N.S.

Increasing the efficiency of machining splined shafts. Avt.
prom. 29 no.7:37-40 Jl '63.   (MIRA 16:8)

1. Moskovskiy avtozavod imeni Likhacheva.
                    (Milling machines)

KALASHNIKOV, S.N.; KOGAN, G.I.; KOZLOVSKIY, I.S.; KORZINKIN, V.I.;
    MARKOV, N.N.; SYROYEGIN, A.A.; TAYTS, B.A., prof., doktor
    tekhn. nauk, red.; TROFIMOVA, Ye.I., kand. tekhn. nauk,
    retsenzent; IVANOVA, N.A., red.izd-va; EL'KIND. V.D.,
    tekhn. red.

[Manufacture of gear wheels] Proizvodstvo zubchatykh koles;
spravochnik. [By] S.N.Kalashnikov i dr. Moskva, Mashgiz,
1963. 683 p.   (MIRA 16:12)
                    (Gearing)

KALASHNIKOV, S.N., kand.tekhn.nauk; GLUKHOV, I.I.

Efficient cutter head for finish machining of bevel gear teeth.
Avt.prom. 30 no.1:32-35 Ja '64.

(MIRA 17:3)

1. Moskovskiy avtozavod imeni Likhacheva.

KALASHNIKOV, S.N., kand.tekhn.nauk; ORLOV, I.V., inzh.

Manufacturing high-precision cylindrical gear wheels under mass
production conditions. Vest.mashinostr. 44 no.7:43-49 Jl '64.
                                                        (MIRA 17:9)

KALASHNIKOV, S.N., kand. tekhn. nauk; GLUKHOV, I.1.

Increasing the efficiency of rough cutting of spiral-bevel pinion gears. Avt. prom. 31 no.2:33-36 F '65.

1. Moskovskiy avtozavod imeni Likhacheva.

(MIRA 18:3)

KALASHNIKOV, S.N., kand.tekhn.nauk; TROFILEYEV. N.N.

Advanced technology for machiring gear-wheel teeth of the distributing shaft of the ZIL-130 engine. Avt.prom. 31 no.10:33-36 O '65.

(MIRA 18:10)

1. Moskovskiy avtozavod imeni Likhacheva.

KALASHNIKOV, T.N.

School dairy.Politek.obuch. no.9:82 S '59.

(MIRA 12:12)

1. Nozhovskaya srednyaya shkola Yelovskogo rayona Permskoy
oblasti.

(Dairying--Study and teaching)

KALASHNIKOV, V.

Teaching aid on organization of the food trade ("Organization and techniques of the food trade" by P.A. Mel'nichuk, G.L. Chernov, K.G. Shmerling. Reviewed by V. Kalashnikov). Sov. torg. no.4:54-56 Ap '58.

(MIRA 11:4)

(Food industry)
(Mel'nichuk, P.A.) (Chernov, G.L.)
(Shmerling, K.G.)

KALASHNIKOV V.

238165

USSR/Electronics - Phonographs   Apr 52
Pickups

"The Quality of Phonograph Pickups," V. V. Kalachnikov,
Council Member, Ufa Dosaaf Radio Club

"Radio" No 4, pp 58-59

Most widely-used pickups are the "Zvezda" electro-
magnetic type complete with arm (produced by the RAAZ
plant of the 'Muzradiosoyuz' and the Sverdlovsk Ray-
promtrest), the PZ-1 and AFR crystal pickups with

arm, and also the electromagnetic "Akkord" and
AD-1 and the crystal AFR separate pickups. Ex-
ternal appearance and sound reproduction is poor
in all types, and a competition for better pickup
types should be conducted.

238165

238165

Kalashnikov, V.
KALASHNIKOV, V.

Triumph of the Party in reclaiming virgin and waste lands. Muk.-
elev. prom. 23 no.11:4-6 N '57.   (MIRA 11:1)

1. Zamestitel' ministra khleboproduktov RSFSR.
          (Reclamation of land) (Grain)

33261   KALASHNIKOV, V.

Vypolnili slovo, dannoye Vozhdyu. (O dosrochnom vypolnenii gos. plana khlebozagotovok. ukr. SSR). Zagotovki s.-kh. produktov, 1949, No 2, s. 15-19

KALASHNIKOV, V.

Higher technical education section of the Moscow Mathematical
Society.   Usp.mat.nauk 12 no.2(74):235-236 Mr-Ap '57.   (MIRA 10:7)
(Moscow--Mathematics)

AUTHOR: Kalashnikov, V.   SOV/84-58-8-43/59

TITLE: About the General Layout of Helicopters (O vneshney komponovke vertoletov)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 8, p 71 (USSR)

ABSTRACT: According to the editor's note, this letter is one of many dealing with certain deficiencies in the trim and controllability of Mi-1 and Mi-4 helicopters. This author is concerned with such problems as the changeover of plug-ins for airfield electric power, compressed air, and fuel and oil to the left side of the fuselage thus making it easier for the pilot to watch operations. It is recommended that cargo and work compartments be placed nearer the rotor axis for better stability during loading and unloading while hovering; at present, every movement of cargo or men destroys the balance of the helicopter. For the same reason the direction of the rotation of the rotor should be reversed, i.e., made to rotate counterclockwise when looked at from above. The stabilizing propeller should be rotated clockwise if looked at from the left side to compensate for list caused by the rotor.

Card 1/1

KALASHNIKOV, V.; PCHOV, V.

Experiment in the calculation of labor requirements in production in the Svetogorsk Woodpulp and Paper Combine. Trudy LTITSBP no.15:160-265 '65. (MIRA 18:8)

L 44381-66   EWT(m)/T   DJ

ACC NR: AP6022405 (A)   SOURCE CODE: UR/0317/66/000/002/0046/0049

AUTHOR: Goryacheva, V. ; Kalashnikov, V. ; Shekhter, Yu.

55
51
B

ORG: none

TITLE: New lubricants and additives

SOURCE: Tekhnika i vooruzheniye, no. 2, 1966, 46-49

TOPIC TAGS: liquid metal lubricant, lubricant additive

ABSTRACT: Soviet industry has recently developed and is producing serially the following inhibiting liquid lubricants: 1) NG-203 (A, B, C—which differ in viscosity and inhibitor content).   The inhibitor is a concentrate of calcium sulfonate. Brands B and C which are the more liquid serve to lubricate the internal parts of machines, machine tools and instruments. Brand A is recommended for the external surfaces; 2) NG-204 and NG-204u are used for equipment exposed to precipitation.   NG-204 is recommended for surfaces of complex shape, NG-204u for external surfaces (casings

Card   1/2

L 44381-66

ACC NR: AP6022405

housings); 3) K-15, K-17 and K-19. The components, state at various temperatures, viscosity, and other characteristics of all the lubricants are given in two tables. The "Neftegar" Plant in Moscow has developed the anticorrosion additive inhibitor "AKOR-1" which improves the protective properties of motor oils. Orig. art. has: 2 tables.

[DW]

SUB CODE: 11/ SUBM DATE: none/   ORIG REF: OV REF: none/

hs
Card 2/2

KALASHNIKOV, V. A. and VIN'KOV, M. P.

"Experience in Operating the EV-80-3 Electronic Computer" a paper presented at the Conference on Methods of Develppment of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56

AUTHORS: Kalashnikov, V. A., Krassov, I. M.,   SOV/119-58-8-2/16
Petrov, V. V.

TITLE: On the Evaluation of Servomechanisms (Ob otsenke
i sravnenii servomekhanizmov)

PERIODICAL: Priborostroyeniye, 1958, Nr 8, pp. 7 - 10 (USSR)

ABSTRACT: A servomechanism is a device for magnifying power output, which
makes use of a foreign source for the purpose of increasing
energy (Refs 1 and 2). A weak control signal is to be modeled
at its output, which had been fed in at its input with errors
being kept as small as possible.
On the basis of an electrohydraulic control mechanism it is
shown to what extent its dynamic and static characteristics
correspond to constructional directives given, and in what way
the mechanism fulfills its task within the framework of the
entire process of control.
Particular care must be taken in order that a servo-mechanism
with such an amplitude-phase characteristic be selected in the
case of which the dynamics of the mechanism exercises hardly
any influence upon the constancy of work and the process of

Card 1/3

On the Evaluation of Servomechanisms   SCV/119-58-8-2/16

control.

The operation of a servo-mechanism is characterized by the following indices:

1) Energetic indices as e.g.:

a) control output, b) the work of control, c) the maximum effective power output, d) nominal stress, e) maximum stress.

2) Static indices as e.g.:

a) the course taken by the static characteristic, b) the nominal velocity of displacement, c) the nominal amount of the control signal, d) the zone of insensibility.

3) Dynamic indices.

These indices characterize processes of transmission in servo-mechanism when a single shock-like action brings about a change from without, or if a sinusoidal modification of the external action influences the phenomenon of motion in the servo-mechanism.

Such indices are: a) the time of supply, b) the time needed for re-establishing the normal velocity of displacement, c) time of slowing down, d) reaction time of the servo-mechanism, e) the time constant of the servo-mechanism.

Card 2/3

On the Evaluation of Servomechanisms   SOV/119-58-8-2/16

     There are 6 figures and 7 references, which are Soviet.

     1. Servomechanisms--Effectiveness 2. Servomechanisms--Control systems 3. Control systems--Performance

Card 3/3

KALASHNIKOV, V.A.

Moscow. Vychaye tekhnicheskoye uchilishche imeni Baumana. Kafedra matematicheskikh mashin

Vychislitel'naya tekhnika (Computer Technique) Moscow, Mashgiz, 1959. 153 p. (Series: Moscow. Vysshaye tekhnicheskoye uchilishche. Sbornik, No. 2) 2,500 copies printed.

Ed.: B.V. Anisimov, Candidate of Technical Sciences; Tech. Eds.: B.I. Model' and A.P. Durova; Managing Ed. for Literature on Machine Building and Instrument Construction: N.V. Pokrovskiy, Engineer.

PURPOSE: This book may be useful to Aspirants and other students specializing in computer technology, and also to designers and engineering and technical personnel who make use of electronic computers.

COVERAGE: The articles in this book (which was published by the School imeni Bauman) in honor of the 40th anniversary of the October Revolution. The articles contain the results of theoretical and experimental studies on the performance of various components of electronic computers. Among the topics discussed are program storage, control devices, the connection between the parameters of an algorithm and a machine, etc. The application of these components to the control of technological processes is also discussed.

Anisimov, B.V, Cand. Tech. Sci/ and V.N. Golubkin, Candidate of Technical Sciences. Analysis of the Quality of Servo-Systems With Discrete Element   32

Dobrov, Ye.V., Engineer. The Effect of Block Diagram Parameters on the Performance Quality of a Tubeless Direct Current Operational Amplifier   46

Anisimov, B.V., Candidate of Technical Sciences, V.N. Golubkin, Candidate of Technical Sciences, and Yu.M. Dovzhenko, Engineer. Device for Transforming the Form of Recording of a Program   56

Trebukhov, K.M., Candidate of Technical Sciences, and K.I. Mokryiov, Engineer. Certain Principles of Constructing Local Control by External Memory Devices   61

Vissenko, V.I., Candidate of Technical Sciences, G.S. Zhdanov, Professor, A.M. Dement'yev, Engineer, and I.M. Ostrovor, Engineer. Method of Forming the Image of Numbers by Means of a Ferrite Matrix   64

Shryder, Yu.A., Candidate of Physical and Mathematical Sciences. The Connection Between the Parameters of an Algorithm and of a Machine   70

Anisimov, B.V., Candidate of Technical Sciences, V.N. Golubkin, Candidate of Technical Sciences, and A.Ya. Savel'yev, Engineer. Device for the Control of Recording of Information on Magnetic Tape   75

Vasil'yev, Ye.P., Engineer. Analysis of Certain Relationships for an Economical Selection of the Dimensions of a Magnetic Drum   81

Anisimov, B.V., Candidate of Technical Sciences, and Yu.V. Vinogradov, Engineer. On the Problem of the Exactness of the Re-Presentation of Continuously Varying Values in a Numerical Code 86

Shryder, Yu.A., Candidate of Physical and Mathematical Sciences. Solution of Boundary Value Problems by the Method of Polynomial Approximations   93

Markov, G.Ye., Engineer. Certain Considerations on the Preventive Control of Electronic Computers   99

M.I. Saplin, Engineer. Photoelectric Device Which Receives Printed Numerical Signs   108

Palashevskiy, A.M., Engineer. Analysis of Information Storage Components of Computers   121

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Kalashnikov, V. A.

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Elementy sistem avtomaticheskogo regulirovaniya. ch. 1:
    Chuvstvitel'nyye usilitel'nyye i ispolnitel'nyye elementy
    (Elements of Automatic Control Systems. pt. 1: Sensing,
    Amplifying and Control Elements) Moscow, Mashgiz, 1959. 722 p.
    (Series: Osnovy avtomaticheskogo regulirovaniya, t 2) Errata
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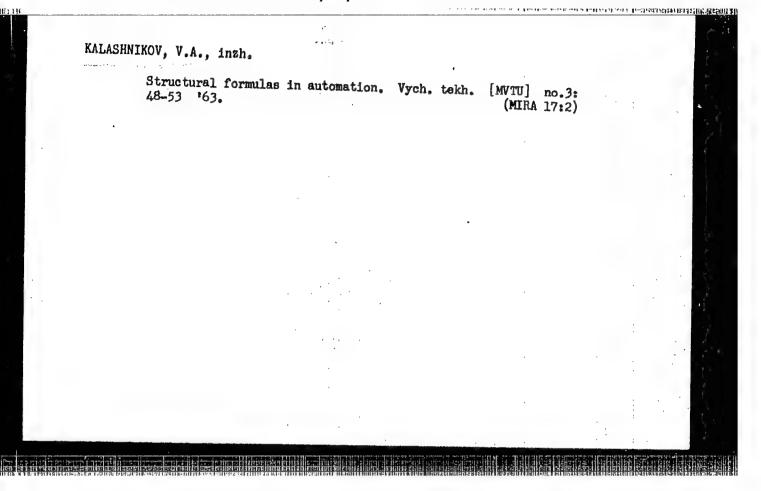
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Sciences, paragraph 1 of Chapter VIII;   K. Ye. Dmitriyev,
Candidate of Technical Sciences, paragraph 2 of Chapter XIII;
V. A. Kalashnikov, Engineer, Chapter XIV;   P. P. Klobukov,
Candidate of Technical Sciences, paragraphs 2 and 3 of Chapter
VIII;   P. F. Klubnikin, Candidate of Technical Sciences, Chapter
XII;   I. M. Krassov, Candidate of Technical Sciences, paragraph
1 of Chapter XIII, and Chapter XIV;   D. S. Pel'por, Doctor of
Technical Sciences, paragraphs 1-3of Chapter III;   V. V. Petrov,
Candidate of Technical Sciences, paragraph 1 of Chapter XIII, and
Chapter XIV;   M. A. Rozenblat, Doctor of Technical Sciences,
Chapter VII;   Yu. Ye. Ruzskiy, Candidate of Technical Sciences,
paragraphs 1, 3-5 and 8-10 of Chapter 1, paragraphs 2-5, 12, 13
and 17 of Chapter II, paragraph 3 of Chapter XIII, and Chapter IX;
B. D. Sadovskiy, Candidate of Technical Sciences, paragraphs 1 and
2 ofChapter X;   A. A. Sokolov, Candidate of Technical Sciences,
Chapter VI;   V.K. Titov, Candidate of Technical Sciences,
paragraphs 9-13 of Chapter IV, paragraph 4 of Chapter X, and
Chapter XI;   G. M. Ulanov, Candidate of Technical Sciences,
paragraph 1 of Chapter II;   Ye. V. Filipchuk, Candidate of Techni-
cal Sciences, paragraphs 6-11, 14-16 and 18-29 of Chapter II;

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KALASHNIKOV, V.A., inzh.

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48-53 '63.
(MIRA 17:2)

KALASHNIKOV, Viktor Anatol'yevich; SABIROV, Rais Shakirovich;
RUDAKOVA, L.A., red.

["Ufa" welding torch; practical manual for introducing
the use of propane-butane mixturer in the flame machining
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Insulating reinforced-concrete reservoirs (from "Konzerv és papirkaipar,
"July-Aug. 1956). Kons. i ov. prom. 14 no.1:43-44 Ja '59.

(MIRA 12:1)

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(Insulating materials)

KALASHNIKOVA, L.M., kand. ekon. nauk, dots.; KALASHNIKOV, V.D.;
    YEPIKHIN, P.S.; LAPSHINA, Ye.A.; PENTKOVSKIY, N.I., prof.,
    retsenzent; GORBUSHIN, P.B., retsenzent; RYABOVA, O.A.,red.

[Economics of the building materials industry] Ekonomika
promyshlennosti stroitel'nykh materialov. [By] L.M.Kalashnikova
i dr. Moskva Vysshaia shkola, 1964. 307 p. (MIRA 17:10)

1. Zaveduyushchiy kafedroy ekonomiki i organizatsii Moskovskogo
inzhenerno-stroitel'nogo instituta (for Pentkovskiy). 2. Chlen-
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Gorbushin).

KALASHNIKOVA, L.M., kand. ekon. nauk; YEFIKHIN, P.S.; ZAGORCHIK, M.M.
[deceased]; KALASHNIKOV, V.D.; NAGIBIN, G.V.; RYABOVA,O.A.,
red.

[Organization and planning of production in building mate-
rials industry enterprises] Organizatsiia i planirovanie
proizvodstva na predpriiatiiakh promyshlennosti stroitel'-
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KALASHNIKOV, Viktor Dmitriyevich; KALASHNIKOVA, Lyudmila Mikhaylovna;
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building materials industry enterprises] Tekhnicheskoe nor-
mirovanie protsessov truda na predpriiatiiakh promyshlennosti
stroitel'nykh materialov. Moskva, Vysshaia shkola, 1965.
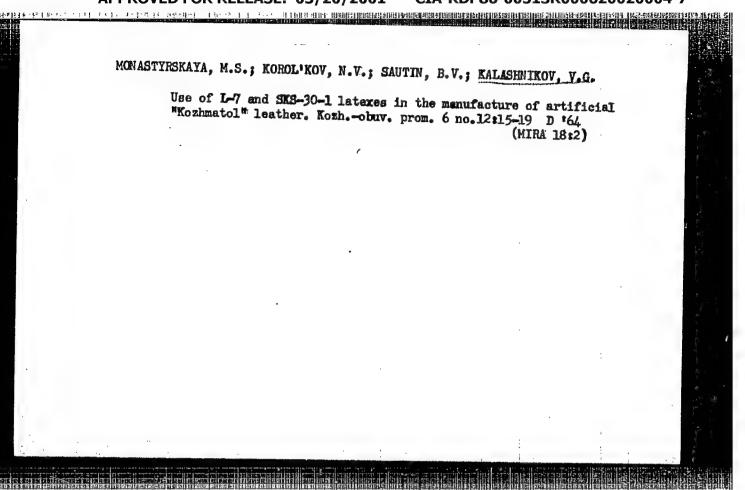242 p.   (MIRA 18:8)

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"Definitive curve describing the variation in brightness of nova lacertae 1910," Astron. Zhur., 16, No 5, 1939.
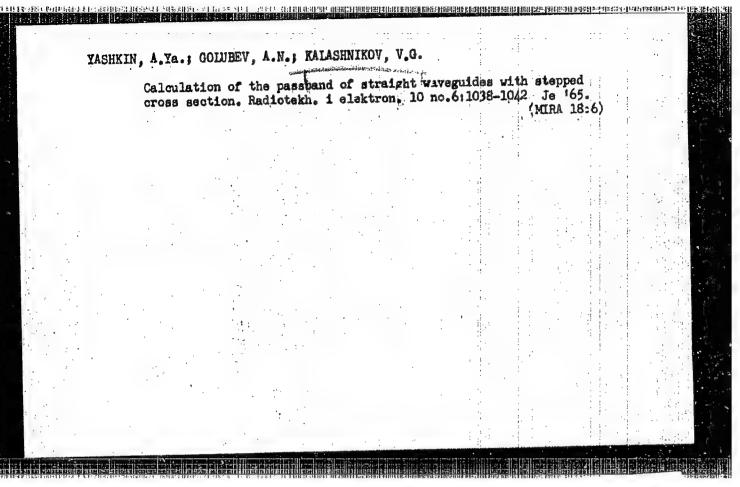
Report U-1518, 23 Oct 1951

ACC NR: AP6034137   (A)   SOURCE CODE: UR/0114/66/000/010/0036/0038

AUTHOR: Kalashnikov, V. F. (Candidate of technical sciences)

ORG: none

TITLE: On statistically estimating the reliability of a turbogenerator set

SOURCE: Energomashinostroyeniye, no. 10, 1966, 36-38

TOPIC TAGS: turbine, electric power plant, statistics, statistic distribution, turbogenerator, mechanical failure, probability, reliability/ PVK-200-1 turbogenerator

ABSTRACT: In this paper problems of statistically estimating the reliability of a turbogenerator set, failures, and recoveries are examined. The PVK-200-1 turbogenerator set is used as an example. An unordered set of N = 66 random realizations of the operating time between failures of a PVK-200-1 and an unordered set of N = 61 random realizations of recovery time were studied. These data were obtained from analysis of the operation of these units at electric power stations. It was found that a turbogenerator set is a complex recoverable system. The flow of failures obeys an exponential law. The flow of recoveries after failures of various elements also obeys an exponential law. A final determination of the distribution law of failures and recoveries in specific cases can be made by analysis of statistical data. Orig. art. has: 4 formulas.

SUB CODE: 10/   SUBM DATE: none/   ORIG REF: 003   UDC: 62-135.004.15
Card 1/1

MONASTYRSKAYA, M.S.; KOROL'KOV, N.V.; SAUTIN, B.V.; KALASHNIKOV, V.G.

Use of L-7 and SKS-30-1 latexes in the manufacture of artificial
"Kozhmatol" leather. Kozh.-obuv. prom. 6 no.12:15-19 D '64
(MIRA 18:2)

L 1256-66   EWA(h)/EWT(1)

ACCESSION NR: AP5024371

UR/0286/65/000/015/0043/0043
621.317.7

AUTHOR: Kalashnikov, V. G.; Golod, O. S.

TITLE: A method for continuously varying the phase of a sinusoidal oscillation.
Class 21, No. 173273

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 43

TOPIC TAGS: oscillation, electronic equipment, phase control, phase variation,
phase regulator

ABSTRACT: This Author's Certificate introduces a method for continuously varying
the phase of a sinusoidal oscillation, where the phase of the input signal is shift-
ed by 90° and both signals are fed to multipliers. Time lag is reduced by feeding
to the second input of each multiplier a control voltage whose amplitude varies in
proportion to the sine and cosine respectively of the required phase shift angle.
The frequency of this control voltage depends on the required rate of change in
phase. A common summation unit is used for vector addition of the output signals

Card 1/2

L 1256-66

ACCESSION NR: AP5024371

from the multipliers.

ASSOCIATION: Organizatsiya gosudarstvennogo komiteta po radioelektronike SSSR
(Organization of the State Committee for Radio Electronics, SSSR)

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NO REF SOV: 000   OTHER: 000

Card 2/2

YASHKIN, A.Ya.; GOLUBEV, A.N.; KALASHNIKOV, V.G.

Calculation of the passband of straight waveguides with stepped cross section. Radiotekh. i elektron. 10 no.6:1038-1042 Je '65.
(MIRA 18:6)

3-58-7-13/36

AUTHOR: Kalashnikov, V.I., Secretary of the Party Office

TITLE: Not Only to Teach, but Also to Educate (Ne tel'ko uchit', no
            i vospityvat')

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 7, pp 47-49 (USSR)

ABSTRACT: The author describes the role of the Komsomol organization in
            the education of future teachers at the Lugansk Pedagogical
            Institute imeni T.G. Shevchenko. The educational work is
            conducted in different aspects of the life of students.
            Students become acquainted with various industries of the
            town; some of them work on different machines in the plants.
            Students also work in various laboratories and workshops of
            the institute. In their free time they visit various schools
            and help the teachers in the laboratories or take part in
            school circles. The Komsomol has organized useful recreation
            for the students in reconstructing war-damaged buildings.

ASSOCIATION: Luganskiy pedagogicheskiy institut imeni T.G. Shevchenko
             (The Lugansk Pedagogical Institute imeni T.G. Shevchenko)

Card 1/2

KALASHNIKOV, N.I., (st. Chernovtsy); SHAMIS, I.M., glavnyy bukhgalter
(st. Chernovtsy); SOLOBAYENKO, L.D., ekonomist (st. Chernovtsy)

Advanced technology of car repair and improved cost accounting.
Zhel. dor. transp. 38 no.8:54-57 Ag '56.   (MLRA 9:10)

1. Zamestitel' nachal'nika Chernovitskogo vagonnogo uchastka
(for Kalashnikov).
          (Railroads--Cars--Maintenance and repair)

VASIL'YEV, V.G., kand.tekhn.nauk; LOMAKIN, V.P., inzh.; KALASHNIKOV, V.I., inzh.
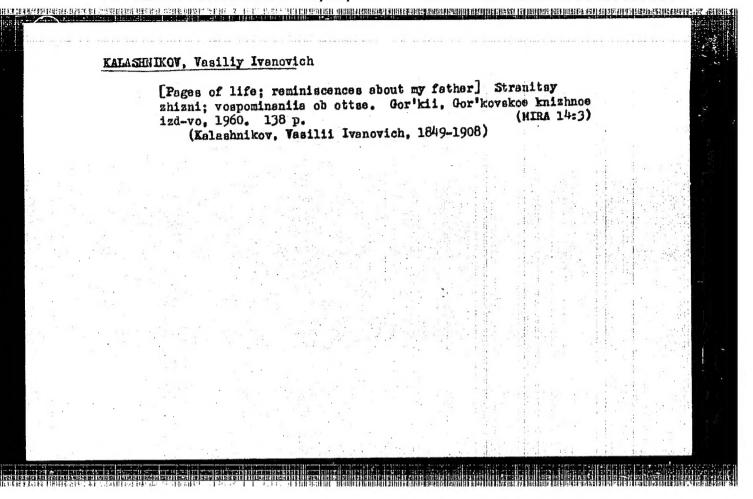
Electron model of electromechanical lifting and thrust mechanisms on excavating machines with simultaneous operation on the part of these mechanisms. Izv. vys. ucheb. zav.; gor. zhur. no.9:109-116 '60.   (MIRA 13:9)

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   (Excavating machinery--Electromechanical analogies)
            (Electronic analog computers)

KALASHNIKOV, Vasiliy Ivanovich

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zhizni; vospominaniia ob ottse. Gor'kii, Gor'kovskoe knizhnoe
izd-vo, 1960. 138 p.   (MIRA 14:3)
      (Kalashnikov, Vasilii Ivanovich, 1849-1908)

KALASHNIKOV, V.I., inzh.; KUZIN, M.D., inzh.; ROZENFEL'D, V.S., inzh.;
SHAVEL'ZON, M.V., insh.

Automatization of technological processes in autoclaves.
Stroi. mat. 5 no.6:18-20 Je '59.   (MIRA 12:8)
            (Autoclaves) (Automatic control)